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ANNUAL PROGRESS REPORT WATER LEASING STUDY

1996

Submitted to:

**Montana Environmental Quality Council
Montana Department of Natural Resources and Conservation
and
Montana Fish, Wildlife and Parks Commission**

Submitted by:

**Montana Fish, Wildlife and Parks
Fisheries Division**

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I. INTRODUCTION

This is the seventh annual report prepared by Montana Fish, Wildlife and Parks (FWP) in response to the reporting requirement under 85-2-436(3)(a) MCA. Two (2) new water leases were given final approval during 1996, bringing the total to nine (9) leases that have been approved under this section since the Water Leasing Study was authorized by the 1989 Legislature. In addition, FWP converted portions of some of its own water rights to instream flow on one stream under 85-2-439, MCA, authorized by the 1995 Legislature. There are no reporting requirements for FWP under this section but this conversion is summarized in this report to keep the results of FWP's leasing projects in one place.

II. SUMMARY

Water leasing activities and accomplishments in 1996 were the following:

1. Completed lease agreement and received final DNRC approval for a water lease on Chamberlain Creek, an important cutthroat trout stream that is tributary to the Blackfoot River near Ovando.
2. Completed lease agreement and received final DNRC approval for a water lease on Pearson Creek, an important cutthroat trout stream tributary to Chamberlain Creek in the Blackfoot River basin near Ovando.
3. Completed the fourth year of implementing two water leases of existing water rights on Mill Creek, a Yellowstone River spawning tributary near Pray. Also, completed the first year of a third water lease on this stream.
4. Completed the third year of implementing a water lease on Blanchard Creek, a Blackfoot River spawning tributary near Ovando.
5. Continued the process of investigating new water leases on: Rattlesnake Creek, a tributary to the Clark Fork River near Missoula; Rock Creek, in the Blackfoot River drainage near Ovando; and Mol Heron Creek in the upper Yellowstone River drainage.
6. Began investigating another possible water lease on Tin Cup Creek, a Bitterroot River tributary, near Darby.
7. Received final DNRC approval to convert portions of FWP's existing water rights on Cottonwood Creek, a tributary to the Blackfoot River that flows through the Blackfoot-Clearwater Wildlife Management Area (WMA) near Ovando

8. Investigated eight leasing inquiries that proved to be infeasible or are being pursued to obtain initial information as to their suitability for leasing.

III. DESIGNATED STUDY STREAMS

When the water leasing study legislation was approved in 1989, FWP was required to receive approval of the Board of Natural Resources and Conservation (BNRC) to study a stream for leasing. As of July 1, 1995, the BNRC no longer exists and this duty is now the function of the Department of Natural Resources and Conservation (DNRC). The following is a list of the streams approved to date, the approving authority and date of approval. Current law allows no more than 20 streams to be approved for water leasing.

1. Swamp Creek (Big Hole R. drainage); BNRC; March 5, 1990
2. Big Creek (Yellowstone R. drainage); BNRC; March 5, 1990
3. Mill Creek (Yellowstone R. drainage); BNRC; November 9, 1990
4. Cedar Creek (Yellowstone R. Drainage); BNRC; January 6, 1992
5. Blanchard Creek (Blackfoot R. drainage); BNRC; September 25, 1992
6. Hells Canyon Creek (Jefferson R. drainage); BNRC; September 25, 1992
7. Tin Cup Creek (Bitterroot R. drainage); BNRC; October 30, 1992
8. Rattlesnake Creek (Clark Fork R. drainage); BNRC; May 25, 1995
9. Mol Heron Creek (Yellowstone R. drainage); DNRC; November 28, 1995
10. Rock Creek (Blackfoot R. drainage); DNRC; November 28, 1995
11. Chamberlain Creek (Blackfoot R. drainage); DNRC; January 3, 1996
12. Pearson Creek (Blackfoot R. drainage); DNRC; January 3, 1996

Leases have been given final DNRC approval on all but four (4) of the designated streams: Swamp Creek., Big Creek, Rattlesnake Creek and Rock Creek. FWP and the potential lessor on Swamp Creek could not reach agreement on a price for the lease. The Big Creek water users are still studying the feasibility of converting from flood to sprinkler irrigation. Discussions with the potential lessor on Rattlesnake Creek are not proceeding very rapidly. Negotiations with the potential lessor on Rock Creek are in progress.

IV. 1996 ACTIVITIES

LEASES APPROVED UNDER 85-2-436, MCA

Two (2) new water leases were given final approval by DNRC in 1996:

1. Chamberlain Creek
2. Pearson Creek

Chamberlain Creek is a southern tributary entering the Blackfoot River about 10 miles west of Ovando. Pearson Creek is a tributary to Chamberlain Creek. These two streams are important Westslope cutthroat trout streams in the Blackfoot drainage. There is one water right on Chamberlain Creek which is split between two parties. Half of the right has historically been diverted by one party into the Pearson Creek basin for irrigation purposes. The other half is used by the other party in Chamberlain Creek for irrigation. With leasing, the portion of the right used in Pearson Creek will no longer be diverted into this basin but will remain in Chamberlain Creek for fishery purposes.

FWP recently completed stream restoration projects on both streams to improve the physical habitat for fish. The water leases complement these projects for the benefit of the fisheries.

WATER RIGHT CONVERSION APPROVED UNDER 85-2-439, MCA

Cottonwood Creek

FWP converted the salvaged portion of some of its existing irrigation rights on Cottonwood Creek to instream flow under the provisions of SB144 (85-2-439, MCA), approved by the 1995 legislature, that authorized the upper Clark Fork River basin instream flow pilot program. This program allows a water right holder to temporarily convert water rights to instream flow after approval by DNRC.

Cottonwood Creek is a northern tributary to the Blackfoot River about 10 miles west of Ovando. It flows through FWP's Blackfoot-Clearwater WMA and is an important spawning stream for brown and bull trout. It also has an important Westslope cutthroat trout population in its upstream reaches.

When FWP purchased the Dreyer Ranch in 1989 as an addition to the WMA, the public showed a strong interest in maintaining agricultural operations on the property, believing, rightly so, that the

ranch's strong wildlife values were, in part, a byproduct of irrigated agriculture and that continued agricultural operations would help control an ongoing weed problem.

With the purchase of the Dreyer Ranch, FWP holds the three earliest irrigation rights on Cottonwood Creek, which are all diverted at the Dreyer Ditch. FWP has improved the irrigation system through ditch lining that will require less water to be diverted from the creek and improve flows in a two-mile reach of stream that normally goes dry during the irrigation season.

A chronology of the events that led to implementation of the leases on Chamberlain and Pearson creeks and the water rights conversion on Cottonwood Creek is given in Part V of this report.

LEASES ACTIVELY PURSUED

(All of the following streams are approved for water leasing study by the BNRC or DNRC.)

1. Rattlesnake Creek

Rattlesnake Creek is a tributary to the Clark Fork River near Missoula. Mountain Water Company, operator of Missoula's municipal water supply, holds several early water rights in the Rattlesnake Creek drainage. Due to *Giardia* problems with the creek's water, the city developed wells to replace the surface water supply. However, the creek remains as an alternate source of supply if wells become inoperable or in the event that water treatment facilities are constructed to handle the *Giardia* problem. Presently, flows in the lower creek are sufficient to protect aquatic life. However, this condition could change if the municipal rights are exercised or converted to other consumptive uses.

FWP is investigating the potential to lease all municipal rights held by the company, with the intent to ensure that these rights remain instream in Rattlesnake Creek to maintain the fishery for a 10-year period. In conjunction with leasing, FWP is investigating the possibility of installing a fish ladder on the municipal diversion dam located about 2.5 miles above the mouth, which is presently impassable to fish. Discussions with the company have been slow.

2. Rock Creek

Rock Creek is a tributary to the North Fork of the Blackfoot River about five miles east of Ovando. Because of its importance as a potential spawning tributary for brown and bull trout, FWP and other interests completed a stream restoration project to improve the physical habitat for fish in a portion of the stream. As part of the restoration, about ½ mile of stream channel was reopened to water flow and the former irrigation system was improved to increase its efficiency. Some of the water previously used for irrigation has been salvaged and would be used to improve flows in about ¾ mile of stream. FWP proposes to lease the salvaged water for fisheries. Discussions were continued with the water right holder.

3. Mol Heron Creek

Mol Heron Creek is an important Yellowstone cutthroat trout spawning tributary to the Yellowstone River near Gardiner. FWP has the opportunity to enter into a water lease agreement with the Church Universal and Triumphant (Church) to improve instream flows in the lower half-mile of stream. The stream has chronic low flow problems in most years due to irrigation withdrawals by the Church.

FWP is investigating the lease of salvaged water in Mol Heron Creek. About ½ mile above the mouth, there is a large diversion dam used to divert irrigation water to lands along the Yellowstone River. This diversion is at least a partial blockage to upstream cutthroat trout migration and also captures young cutthroat migrating downstream to the Yellowstone River, reducing a source of recruitment to the river fishery. The Church will replace its existing flood irrigation system with a more efficient sprinkler irrigation system that will allow some water to be salvaged. The possibility of leasing the salvaged water is being investigated. The intent of the lease is to ensure that the salvaged water remains instream to the mouth of the creek to improve the reproductive capacity of the stream and enhance the important cutthroat fishery in the Yellowstone River.

In conjunction with water leasing, a new "fish friendly" diversion would be installed at the existing diversion to improve both upstream and downstream fish migration.

OTHER INVESTIGATIONS

Eight (8) other potential leasing opportunities were investigated. Some were not further pursued for reasons described in Part VI of this report. Others are still being pursued to obtain initial information to determine their suitability for leasing.

V. REPORTING REQUIREMENTS FOR COMPLETED LEASES

Section 85-2-436 (3)(a) requires that an annual leasing progress report contain specific information on each pilot lease entered into during the report period. The following information, listed under 85-2-436(1)(a) and (b), is provided below for the two new leases (Chamberlain and Pearson creeks) completed in 1996:

- (a) provide the following data for each designated stream reach and each pilot lease entered into under subsection (2):
 - (i) the length of the stream reach and how it is determined;
 - (ii) technical methods and data used to determine critical stream flow or volume needed to preserve fisheries;
 - (iii) legal standards and technical data used to determine and substantiate the amount of water available for instream flows through leasing of existing rights;
 - (iv) contractual parameters, conditions, and other steps taken to ensure that each lease in

- no way harms other appropriators, particularly if the stream is one that experiences natural dewatering; and
- (v) methods and technical means used to monitor use of water under each lease;
 - (b) based on the data provided under subsection (1)(a), develops a complete model of a water lease and lease authorization that includes a step-by-step explanation of the process from initiation to completion.

(I) **Length of stream reach**

Chamberlain Creek - The affected reach, which is about 1.7 miles long, extends from the previous diversion to the creek's confluence with the Blackfoot River.

Pearson Creek - The affected reach extends about 1.3 miles from the previous diversion to the creek's confluence with Chamberlain Creek.

(ii) **Technical methods to determine critical streamflow**

The amount of flow being leased for Chamberlain Creek is $\frac{1}{2}$ the flow of the stream up to 25 cfs and is the amount that was available for leasing. It is less than the desired flow needed to fully protect the stream resources, but is deemed sufficient to have significant fishery benefits. One other water user has the other half of the water right up to 25 cfs.

The amount of flow leased on Pearson Creek is the total amount of the single water right on the stream, up to 8 cfs. With the reconstructed channel, this flow is adequate to fully protect this streams' fishery resource.

(iii) **Legal standards**

An extensive package of information was assembled and used to determine the amount of water available for instream flows for the two leases. This included:

1. The amounts of the rights claimed under SB76 or previously decreed;
2. An evaluation of historic irrigation practices on the two creeks and the use of the rights under investigation on the affected lands;
3. An analysis of irrigation return flows;

4. An evaluation of other water uses, including diversion locations and the amounts and priority dates of their claimed rights; and
5. An evaluation of in-channel water losses.

This and other information is discussed in FWP's "change" application for each of the two leases.

(iv) **Steps to insure non-injury to other users**

Various steps incorporated in the leasing process ensure non-injury to other water users. These include:

1. Water users who could be potentially injured have the opportunity to voice their concerns when a lease agreement is brought before the Fish, Wildlife and Parks Commission for approval.
2. FWP, or its contractor, conducted hydrologic analyses to determine the leases' effects on other users. The analyses showed that these effects were nonexistent or negligible for the two leases.
3. The DNRC administrative "change" process provides an opportunity for individuals potentially injured by a proposed lease to object and resolve their concerns before a "change" is granted. However, there is only one other water user on Chamberlain Creek downstream from the former diversion point and this individual would not be affected by the lease. There are no other water users on Pearson Creek. Thus, the DNRC chose to waive public notice of the two water right changes.

(v) **Means used to monitor water**

The monitoring plans for the two leases are presented in Appendix A.

b. **Water leasing model**

The following provides a chronological documentation of the principal events that led to the completion of the two leases. The two streams are combined in this chronology because the leases were with the same individual and proceeded through the process at the same time.

Chamberlain/Pearson Creeks Leasing Chronology

July 21, 1995	FWP personnel meet with Heart Bar Heart Ranch Partnership personnel to discuss leasing opportunities and tour potential lease sites.
July 26, 1995	FWP requests FWP Commission approval of the two streams for water leasing study.
August 4, 1995	Chamberlain and Pearson creeks were approved by the FWP Commission as pilot leasing study streams.
September 20, 1995	FWP personnel again tour the lease sites on Pearson and Chamberlain creeks.
October 20, 1995	First draft of leasing agreement completed by FWP and sent to Heart Bar Heart for review.
November 14, 1995	BLM provides FWP with hydrologic analysis for Chamberlain Creek.
November 16, 1996	FWP completes "change" application and sends to lessor for review.
November 28, 1996	FWP sends letter to State Historic Preservation Office requesting analysis of projects' potential impacts on historic sites.
November 30, 1995	FWP submits Chamberlain/Pearson creeks to DNRC for approval as pilot leasing study streams.
December 1, 1995	Heart Bar Heart Ranch provides lease and "change" application corrections to FWP.
December 1, 1995	"Change" application completed and sent to DNRC for processing.
December 4, 1995	State Historic Preservation Office responds to FWP's request. The leasing project will not affect historic sites.
January 3, 1996	DNRC approves Chamberlain and Pearson creeks as the 11th and 12th pilot leasing study streams.
January 30, 1996	Final leasing agreement sent to Heart Bar Heart for signing.
January 31, 1996	Chamberlain/Pearson leasing EA sent out for public comment.
March 4, 1996	EA deadline passes with one comment from the public.

March 6, 1996	Leasing agreement signed by Heart Bar Heart.
March 13, 1996	EA Decision Notice is prepared and mailed.
March 19, 1996	Leasing agreement signed by FWP.
March 25, 1996	Letter sent to Heart Bar Heart, notifying them that lease approval, except for "change", was complete.
July 3, 1996	FWP meets with DNRC in Helena to discuss unresolved issues with the "change" application.
October 18, 1996	DNRC approves "change" application and issues "change" authorization to FWP.
October 31, 1996	FWP notifies Heart Bar Heart of DNRC approval of "change", thus completing the approval process.

Cottonwood Creek Chronology

August, 1993.	FWP pursues funding to line a ditch on the Blackfoot-Clearwater WMA, thereby salvaging water that could be available for instream flows in Cottonwood Creek.
August, 1993.	Report by Land and Water Consulting, Inc., Missoula, on Cottonwood Creek entitled "Water rights, irrigation and fish friendly diversion alternatives".
March 10, 1994.	FWP's Fisheries Division Administrator approves proposal to seek a salvaged water lease on Cottonwood Creek.
March 7, 1995.	FWP personnel and engineering consultant meet to begin gathering information for the leasing process.
March 14, 1995.	Draft pilot water leasing study report prepared by FWP and sent to FWP's Region 2 for review.
April 7, 1995.	Cottonwood Creek leasing study report presented to FWP Commission for approval. Commission approves stream for leasing study.
April 14, 1995.	SB144 by 1995 legislature becomes effective, allowing water right holder to temporarily convert diversionary water rights to instream flow.

- May, 1995. FWP decides to pursue Cottonwood "lease" under provisions of SB144 rather than under 85-2-436, MCA, the water leasing study.
- September 20, 1995. FWP personnel visit site to gather information.
- December 1, 1995. FWP and USGS personnel visit lease site to collect flow and channel morphology data for use in the "change" application.
- February 14, 1996. FWP submits "Change in Appropriation Water Right" application to DNRC for approval to convert water rights to instream flow.
- March, 1996. Draft Environmental Assessment (EA) completed and sent to FWP's Region 2 fisheries personnel for review.
- May 14, 1996. EA sent out for public review and comment.
- June 15, 1996. EA deadline for comment passes with one public comment received.
- July 3, 1996. FWP meets with DNRC water rights personnel in Helena to discuss unresolved issues with the "change" application.
- July 9, 1996. FWP submits information to DNRC to resolve "change" issues.
- July 12, 1996. EA Notice of Decision completed after the one public comment is resolved.
- August 26, 1996. DNRC contacts FWP to approve DNRC modifications to "change" application.
- October 18, 1996. DNRC approves "change" application and issues Authorization to Change Appropriation Water Right certificate to FWP, completing the process.

VI. OTHER INVESTIGATIONS IN 1996

Eight (8) other potential opportunities for water leasing were investigated. Some were not pursued further for reasons that are described in Part VI of this report. Others are being pursued to obtain initial information as to their suitability for leasing. Leasing offers were investigated on the following waters, some of which are already approved for water leasing:

1. Frazier Creek, tributary to Flathead Creek (Shields R. drainage)*
2. Rattlesnake Creek near Missoula*

3. North Fork Blackfoot River
4. Dearborn River
5. O'Dell Creek (Red Rock R. drainage)
6. Mill Creek (Yellowstone R. drainage)
7. Mill Creek (Yellowstone R. drainage)
8. Tin Cup Creek (Bitterroot R. drainage)

The items marked with (*) were not pursued for a number of reasons, including:

1. The flow amount offered for leasing was too small to make a difference;
2. the stream did not have a dewatering problem;
3. the fishery benefits were judged too insignificant to justify a lease;
4. the stream was embroiled in water right controversy that would greatly hamper lease implementation;
5. the right holders withdrew their offer when made aware of the leasing process and anticipated time frames.

The remaining offers are being pursued to obtain initial information as to their suitability.

A summary of the features and costs of the water leases that have been approved to date under the water leasing study is given in Appendix B.

NOTE: FWP's water rights' conversion on Cottonwood Creek is also included in Appendix B.

VII. APPENDICES

APPENDIX A

WATER LEASE MONITORING PLAN - CHAMBERLAIN AND PEARSON CREEKS

Two components comprise the instream flow monitoring plan for the leases on Chamberlain and Pearson creeks: A) a stream gauge to monitor flows and B) an administration program to ensure that the leased instream flow is maintained.

A) Stream Gauge

A staff gauge will be established at the one other water users diversion point on Chamberlain Creek to assist with the distribution of stream flow, ½ of which can be diverted by the other user. A control structure has already been placed at the head of this diversion to further aid with flow distribution.

Because the lessor is the only water user on Pearson Creek, no gauges are planned for this site.

B) Administration

FWP will primarily rely on Heart Bar Heart Ranch personnel to monitor instream flows. Personnel of FWP will be available to periodically check the gauge and measure flows to ensure an even flow distribution between the two Chamberlain Creek water users.

MONITORING PLAN - COTTONWOOD CREEK

Two components comprise the flow monitoring plan: A) gauges to monitor flows and B) an administration program to ensure the instream flow is maintained.

A) Gauges

FWP will establish two staff gauges; one immediately downstream from the Dreyer Diversion to monitor flows in Cottonwood Creek and the other at or near the head of the Dreyer Diversion to monitor FWP's water withdrawals. Installation of the staff gauges and the development of rating curves could be contracted to the USGS, depending on availability of funding. If funds are not available, FWP will install and rate the gauges.

B) Administration

FWP will primarily rely on its agricultural lessee on the WMA to administer water withdrawals at the Dreyer Diversion and to monitor flows in Cottonwood Creek. Personnel of FWP will be available to periodically measure flows to check the gauge's accuracy.

A comprehensive flow monitoring program for Cottonwood Creek is not essential to implement this change because there are no diversions within the approximate 2-mile-long reach where FWP intends to protect its salvaged water. In the unlikely event that new diversions are approved, FWP will then develop a more comprehensive flow monitoring plan for Cottonwood Creek.

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Features and Costs of Approved Water Leases

SOURCE	LESSOR	TERM OF LEASE	PRIORITY OF RIGHT	QUANTITY LEASED	PERIOD OF USE	COST
Mill Creek	Mill Creek Water and Sewer District	10 years	95 right with various priorities	Up to 65 cfs	48-60 hours in Aug. Diversion shut off after 10-day notice from FWP	\$12, 750 per year ¹
Mill Creek	Individual	10 years	June 30, 1880; June 1, 1903	2.0 cfs (1880) and 4.13 cfs (1903) (salvaged water)	May 1 -October 4	\$7,500 per year
Blanchard Creek	Individual	5 years	May 11, 1913 (first right on stream)	3.0 cfs	April 15 -October 15	Up to \$2,000 per year
Tin Cup Creek	Six Individuals	5 years	August 1, 1883 (first right on stream)	2.28 cfs April 1-April 14 4.32 cfs April 15-April 30 4.72 cfs May 1-October 19 1.8 cfs October 20-November 4	April 1 - November 4	\$6,260 per year
Cedar Creek	US Forest Service	10 years	April 1, 1890, April 1, 1893, April 1898, April 1, 1904, April 7, 1972 (high water rights only)	6.77 cfs May 1-July 15 ² 6.39 cfs July 16-July 31 9.64 cfs August 1-August 31 6.39 cfs Sept 1 - October 15	May 1-October 15	\$1.00 per year
Hells Canyon Creek	Three Individuals	20 years	December 31, 1884 (first right on stream), August 23, 1889, August 29, 1912	1.12 cfs (salvaged water)	April 1 - November 4	\$25,000 - One-time payment
Mill Creek	Individual	10 years	June 1, 1891	2.64 cfs (salvaged water)	May 1-October 19	\$4,200 per year
Chamberlain Creek	Individual	10 years	October 10, 1911	½ the flow up to 25 cfs	April 1 - October 31	\$1.00 per year
Pearson Creek	Individual	10 years	October 10, 1911	Up to 8 cfs	April 1 - October 31	\$1.00 per year
Cottonwood Creek	FWP ³	9 years	May 1, 1884	14.0 cfs April , 37.0 cfs May 1-June 30, 32.0 cfs July, 9.0 cfs August, 6.0 cfs Sept, 9.0 cfs Oct, 8.0 cfs November (salvaged water)	April 1 - November 4	None

¹Lessor pays for water commissioner and the installation of measuring devices on all on-farm turnouts from the pipeline.

²These rights are used to maintain a flow of 1.3 cfs at the mouth of Cedar Creek, eliminating effects on other water users.

³FWP converted its own water rights to instream flow under 85-2-439, MCA.

